SECTION 3. THE WATERSHED INFORMATION CLEARINGHOUSE: A MODEL TO PROMOTE COMMUNICATION AND IMPLEMENTATION WITHIN WATERSHEDS

Initially, this project aimed to evaluate whether Watershed Management Plans such as those currently being used in Utah, Georgia, North Carolina, and other watershed states had potential for application in the Pacific Northwest. The project analysis would have identified the information and communication needs of various watershed partners and their associated programs, mandates, and/or regulations, to determine how a shared Watershed Management Plan might fulfill those needs or requirements. It also would have evaluated the content of each section of the proposed Watershed Management Plan to determine whether that content fulfilled the information and communication needs of each program, agency, and partner considered. Project recommendations would have been directed either to changes in Watershed Management Plan format, or to the attributes of information needed to fulfill these anticipated needs or requirements.

The first day's interviews were based on this initial project concept. However, the project team quickly concluded that the information and communication needs of Pacific Northwest watershed partners required a much more dynamic and flexible model than a single written document, such as a Watershed Management Plan could provide. The concept of a watershed information clearinghouse emerged, which would serve as a virtual watershed atlas. Participants responded favorably and enthusiastically when presented with this concept which responded to their information and communication needs. Due to the strength of support for a watershed information clearinghouse concept, the project focus shifted away from a written Watershed Management Plan to the watershed information clearinghouse model.

The information clearinghouse concept discussed in Section 3.2 is first described as the model under development in Yakima and secondly, as a synthesis of the ideas of interview participants in their enthusiasm to integrate all of the watershed programs and projects in Washington.

Watershed information clearinghouses would be organized and supported by partners within each of the established geographic areas. The information would be maintained in an electronic format with each watershed partner having equal access to it. The clearinghouse information data on which partners individually and jointly establish priorities; and in advanced cases, clearinghouses could facilitate the development of agreements where complementary objectives had been identified. The objectives of Section 3 are to:

- present a rationale for watershed information clearinghouses based on interview comments;
- describe the watershed information clearinghouse model that is under development in Yakima and as the concept evolved during project interviews; and

- list recommendations for further refinement of, potential applications of, and issues to be resolved in using, the watershed information clearinghouses.

3.1 Rationale for Watershed Information Clearinghouses

The rationale that emerged from project interviews for developing and using watershed information clearinghouses in place of individual written Watershed Management Plans had two components:

Watershed Partnerships Cannot Sustain a Common Product: Natural resource protection and management programs in Washington are increasingly recognizing the need for an integrated management approach. Two factors influence this condition. First, watershed-related activities in Washington are numerous and diverse. Second, the amount of environmental information available is staggering. If data do not have to be re-gathered by each entity, it can more easily be considered, ultimately resulting in better decision-making. However, the political climate is not necessarily conducive to forming partnerships between private groups and governmental agencies. Those partnerships that are tenuously formed, or are in their formative stages cannot sustain a commitment to a common product or agreement such as a Watershed Management Plan.

Nevertheless, many potential partners recognize the need for improved information management and communication to more effectively manage resources. Better information management and communication would provide substantial assistance to partners in all phases of watershed planning and implementation. There is sufficient willingness in many locations to invest resources and information in a shared watershed information clearinghouse. This willingness to invest in information sharing was encountered in Yakima, and several other watersheds represented in the interviews. Most interview participants envisioned a broad use of the watershed clearinghouse in providing a framework for negotiating partnership agreements, and implementing a variety of programs.

The Diversity of Information and Communication Needs is Better Served by a Clearinghouse: The watershed information clearinghouse provides watershed partners with the flexibility to address a wide range of information needs, and the capability to produce many different types of communication products (i.e., brochures, technical documents, agreements, accounting reports). The watershed information clearinghouse is viewed as a tool that will assist partners in developing the diverse communication products that are necessary to successfully implement resource protection programs using a watershed approach. Several interview participants noted that watershed partners will likely be working on an increased number of common products over time. The clearinghouse is the first step in that direction.

3.2 The Watershed Information Clearinghouse Model

This section describes two watershed information clearinghouses. Section 3.2.1 provides a description of the Yakima information clearinghouse and associated coordinator position – a locally initiated and implemented effort. Section 3.2.2 describes the clearinghouse model that could serve the needs of the myriad of Washington's potentially participating watershed and water resource–related programs, as well as the needs of local entities. This second model is a synthesis and evolution of the thoughts of interview participants from a variety of agencies when presented with the clearinghouse concept.

3.2.1 Yakima Watershed Clearinghouse

The need for a central source of water quality related information has been a topic of discussion by many public and private entities in the Yakima Basin for many years. The Yakima River Watershed Council (YRWC), a partnership of local, state, and federal agencies, private interests, and Yakima Indian Nation representatives, is working to improve water quality in the Yakima basin. As local watershed activities increased over the years, the need to share information became increasingly apparent and immediate.

In December 1995, more than a dozen of these entities met to discuss how they might collectively address information sharing needs in the watershed. The Yakima watershed information clearinghouse and coordinator concept was born at that meeting. The meeting participants decided to collectively apply for a Centennial Clean Water Fund (CCWF) grant to fund a position for a water quality (and related) information coordinator. An ad hoc grant proposal committee was formed to seek funding. A larger committee, the oversight committee composed of staff from state and federal agencies, the tribe, and private organizations, was also formed to oversee the operation of the clearinghouse and information coordinator role. Thus, the clearinghouse and coordinator position were created through a collaborative, community–based process.

The information coordinator position was funded by Ecology through a $125,000 CCWF grant. A number of the watershed partners volunteered office space, a computer, library space, and in–kind services and materials. The oversight committee will continue its role to ensure that the coordinator continually meets watershed community needs and that the coordinator receives the necessary training and support. The coordinator's role is envisioned by the watershed partners as neutral – not responsible to any one agency or organization. The coordinator will not interpret or edit information, nor make decisions on which data to include. The coordinator may, upon oversight committee decision, prepare summaries, a monthly calendar of events, and listings of new materials.

The information clearinghouse in Yakima is intended to focus solely on the needs of the watershed partners it serves. It is currently not envisioned to serve in preparing data of information of decision–

making agencies. The partners will jointly decide how information will be used.

3.2.2 Expansion of the Information Clearinghouse Concept

Interview participants enthusiastically embraced the concept of an expanded information clearinghouse for a number of reasons. First, participants viewed the concept as a mechanism to coordinate watershed (geographically–based) resource management activities, without the burden of generating a planning document. Second, participants recognized that information sharing can also serve to integrate management decisions across programs and agencies. Interview participants also realized the long–term savings such a clearinghouse could provide by reducing redundancy in information and environmental data gathering efforts across organizations.

Thus, the primary purpose of a clearinghouse designed to meet the needs of the diverse number of watershed–related programs is to develop, maintain, and provide access to an electronic database on all relevant aspects of the watershed. The clearinghouse would be designed to meet the data needs of the participating local, state, federal, tribal and private partners in a watershed. Watershed partners would provide environmental data, assessment reports, descriptions of their activities or projects, and other information of interest. Data developed by local interests (e.g., volunteer monitoring, best management practices and implementation projects, citizen participation opportunities) would also be included. The electronic files would be structured to facilitate use by the watershed partners. Figure 3–1 illustrates one concept of how this information could be indexed to create a virtual watershed atlas. The final report of the Intergovernmental Task Force On Monitoring Water Quality (1995) makes several recommendations for the categorization and characterization of environmental information that could be incorporated into the clearinghouse design.

Where possible, relevant information would be keyed to specific geographic locations within the watershed boundaries. The database could be structured to provide information both on a watershed–wide basis as well as on a smaller hydrologic unit ("nested" unit) basis. The end result would be that users could construct maps to identify areas of concern or interest, and of the activities of other partners, that might influence their decision–making process. describing the content and location of the original data files. Metafiles could include information describing: 1) the collection of and analytical methodology for environmental samples, 2) data quality objectives for projects, 3) type of measuring units, 4) a summary of the information or project, and 5) any other attributes of the information a user would need to determine whether or not it is compatible with the user's intended purpose. The use of metafiles eliminates the problems of maintaining and updating data sets in multiple locations.

Fig. 3–1. Virtual Watershed Atlas.

The watershed information clearinghouse would not recreate or replace existing databases. Information already accessible in electronic format would be abstracted into a metafile Information clearinghouses in each watershed would need to be accessible to all of the entities participating in the project in a watershed and to the public. Public access could be achieved through internet home pages. Local public access could also be enhanced through read-only computer access provided at libraries, county office buildings, and schools.

The concept of watershed information clearinghouses can be integrated into and consistent with the watershed planning and implementation process described in Section 1.2. A consistent relationship between information management activities and watershed planning and implementation activities has been developed in other states. Figure C-1 (Appendix C) illustrates how the information management procedures for a watershed information clearinghouse could be consistent with any step in the process. Information specialists could be involved in more than one of the steps or activities, depending on the needs of the watershed information clearinghouse partners.

Additional planning would be necessary to include all of the potential watershed partners reflected in Section 2.0 of this report to detail a full description of the model in each watershed. Figure C-2 (Appendix C) provides a series of steps for establishing an information clearinghouse that could be followed within each of the designated geographic units (e.g., Water Quality Management Areas) that would have a clearinghouse. These steps were used by a consortium of watershed partners in North Carolina Neuse River Basin to establish a watershed information clearinghouse. There are several milestones and guidelines identified in this figure and the process appears to be complex. However, watershed partners will determine which steps in the figure would need to be considered to develop a successful watershed information clearinghouse. The primary design goal is to facilitate the use of information by watershed partners. Section 3.3 presents recommendations made by various interview participants which should be considered during the planning of an information clearinghouse.

3.3 Recommendations for Application and Refinement of the Clearinghouse Model

Internet Home Page: The clearinghouse should be accessible through an internet home page site. The home page would serve as an electronic atlas that would be updated by the clearinghouse staff on a regular basis. The home page would offer a bulletin board for watershed partner and user input on upcoming events and meetings. The bulletin board feature could also be used to alert clearinghouse staff about additional data sources for acquisition.

Public Access Terminals: To provide adequate public access to the electronic watershed information clearinghouse, terminal connections could be maintained at several locations within the clearinghouse boundaries (e.g., the Water Quality Management Area). Accessible locations that might be considered include: public libraries, schools, public buildings, or in space contributed by a watershed partner.

Metafiles and Linked Databases: The clearinghouse would not reproduce information contained within existing environmental databases. For extremely large or complex data sources the "home page" would include a pointer, or directions, for accessing additional data. The metafile indexes would describe the nature and purpose of the data, including any relevant quality assurance information, but would not contain the original data. The index would contain enough information -- including date of collection or posting -- to enable the reader to determine if the information met their use criteria.

Data Use Policies: The watershed information clearinghouse partners could select boards or committees to develop negotiated understandings on inclusion of data submitted to the clearinghouse. A clear understanding of the potential liabilities associated with submitting data for public review is critical for encouraging many information sources to contribute to the clearinghouse. For example, if a water quality violation is identified, should the information immediately be uploaded to the clearinghouse where an enforcement agency may have access to it, or will there be intermediate steps? Interim steps could include strategic monitoring to confirm the extent and magnitude of the problem, and if there is a problem, negotiations among involved partners to develop a suitable mitigation strategy. Data quality will also be an area for policy development. Data quality should be considered in determining its utility in priority setting and development of management strategies.

Information Input and Data Security for Linked Databases: Clearinghouses should have clearly established procedures for receiving and incorporating new watershed information from a diversity of sources. Recommended policy development areas include policies for: data inclusion, screening, and data security. The policies would be established by the watershed partners in each watershed and would be implemented by the clearinghouse information specialist. Interactive features of the internet home page may also raise questions of data security not only for the clearinghouse, but also for the electronically-linked databases.

Geographic Management Units Upon Which Watershed Clearinghouses Would be Based: Interview participants generally supported using the boundaries of the 23 Ecology Water Quality Program - Water Quality Management Areas for the clearinghouses. However, three important concerns were identified relating to the use of WQMAs:

1) The clearinghouses must be able to index on smaller (more local) hydrologic units within the WQMA indexing, for example, to a specific stream reach or project level.

2) Currently Puget Sound and the Columbia River are divided among several of the WQMAs. The clearinghouse system must have the capability to consolidate information from the WQMAs for these water bodies.

3) Fish and Game and USFWS have several information and communication needs that the clearinghouse can support (see Section 4.1 on the Endangered Species Act). However, many

wildlife issues require the assessment of information on a geographic scale that is larger than the WQMAs, such as ecoregions.

This project does not propose a definitive statement regarding the appropriate geographic scale for establishing clearinghouses. Before this can be done, watershed partners must be consulted regarding their concerns over the use of WQMAs or other geographic boundaries, as the organizational unit for the watershed clearinghouses. Inter- and intra-agency, and inter-jurisdictional agreements may need to be developed, once the watershed boundaries have been established.

Fulfilling Technical Reporting Requirements: As the electronic watershed clearinghouses become more established, their role in fulfilling communication needs will grow. Some agencies are responsible for developing and implementing programs, while others have oversight responsibilities. Oversight agencies could use the clearinghouses to access reporting requirement information. For example, a local watershed could integrate and post the relevant information needed for 305(b) reports already in existence in the clearinghouse. The oversight agency, EPA in this example, could then retrieve and review this information to fulfill its oversight role. This feature places more responsibility on the oversight agency for acquiring information, but also allows the implementing agency to focus more of its attention and resources on local objectives.

Costs Associated With Establishing Watershed Clearinghouses: Based on information gathered during interviews, it is clear that Ecology cannot be the primary source of funding for establishing watershed clearinghouses. Although no formal commitment of funds could be made by the interview participants, they acknowledged that watershed clearinghouses would be of sufficient value to their agencies to merit funding for the creation and maintenance of the clearinghouse, and in some cases, the network. Interview participants indicated that the costs should be shared across all watershed partners, including private sector partners. No mechanism was identified for consolidating funding from several agencies on a regular and sustainable basis.

Public Access Restrictions to Selected Information: This issue is a subset of Data Use Policies established by the local board. There is information that should not or cannot be provided to all clearinghouse users. In particular, the specific location of Threatened and Endangered species cannot be included in the database that can be accessed by the general public. In addition, it would not be appropriate to highlight or pinpoint an individual landowner as a source of nonpoint pollutants. Location of information is an important factor for targeting and implementing Habitat Conservation Plans for Endangered Species and recommended BMPs for source areas. However, in cases where specific location information can bring harm to a species or have liability consequences for an individual the clearinghouse will have to ensure that the information is sufficiently generalized to protect the interests and identify of affected parties.